AMENDMENTS TO THE CLAIMS

Kindly amend the claims as follows:

1. (currently amended) A remote XRD means for identifying a material in a volume of interest (VOI) comprising[[;]] :

   a. a plurality of N X-ray sources targeted towards said VOI; wherein N is an integer ~~number~~ equal to or ~~higher~~ greater than 1;

   b. a plurality of M X-ray detectors adapted to receive diffracted X-rays so an image comprising at least a portion of the obtained XRD patterns is obtained; wherein M is an integer ~~number~~ equal to or ~~higher~~ greater than 1;

   c. a processor adapted to measure said patterns;

   d. a database comprising records of patterns' parameters characterizing predetermined materials; said database comprising records of materials that a notification should be provided when identified; and,

   e. alerting means adapted to alert the operator when ~~wherein~~ the identified material is one of said predetermined group.

2. (currently amended) The remote XRD means according to claim 1, wherein the material is selected from at least one of the group of explosives, flammable substances, toxic substances, radioactive substances, chemical and biological warfare agents ~~substances in either~~ in a form chosen from the group consisting of ~~gas, liquid or~~ solids ~~states~~, spores, drugs and narcotics, ~~radioactive agents~~ or a combination thereof.

3. (cancelled)

4. (original) The remote XRD means according to claim 1, wherein the material is being transferred on a passenger and/or in his carry-on luggage.

5. (currently amended) The remote XRD means according to claim 1, wherein ~~the XRD is~~ said XRD means comprise any technique adapted for calculating a parameter chosen from the group consisting of (a) the Debye-Scherrer diffraction pattern, (b) the ~~or~~ energy profile obtained by X-ray scattering of the material, and (c) both of the above.

6.   (currently amended) The remote XRD means according to claim 5, wherein ~~the~~ said XRD means are ~~is any technique~~ adapted for calculating the diffraction pattern or energy profile obtained by X-ray back scattering of the material.

7.   (original) The remote XRD means according to claim 1, wherein the X-ray detector is a 2D detector.

8.   (currently amended) The remote XRD means according to claim 1, wherein the processor is adapted to measure at least a portion (≤ 360°) of the full Debye-Scherrer rings. ~~of the XRD patterns.~~

9.   (original) The remote XRD means according to claim 8, wherein the processor is adapted to measure the central portion of the XRD patterns.

10.   (original) The remote and non-intruding XRD means according to claim 1, adapted to identify moving VOIs; wherein said VOI is either carried by means of walking persons or carried on a conveyor belt, or the VOI is being moved in any way.

11.   (currently amended) The remote and non-intruding XRD means according to claim 1, adapted to identify sampled moving VOIs; additionally comprising means to sample said VOI so that notification of the presence of the VOI is made to the operator ~~notified~~; and means ~~to~~ for surveillance or follow up of said VOI before identifying its nature.

12.   (original) The remote XRD means according to claim 11, adapted for online surveillance or follow up.

13.   (currently amended) The remote XRD means according to claim 1, wherein ~~the~~ said alerting means are adapted to alert either online or offline, to alert to a predetermined remote location, to be in communication with effective means adapted to isolate or immobilize said VOI transport until subsequent notification or any combination thereof.

14.   (currently amended) The remote XRD means according to claim 1, wherein the detector is a Cell-X[[;]] adapted for acquiring both ~~VOI's~~ the XRD image of said VOI and information about ~~its~~ the energy profile of said VOI.

15.   (currently amended) A method for acquiring XRD images of a material in a VOI, comprising the steps of[[;]] :

    a.   receiving VOI coordinates from a lower stage system;

    b.   irradiating the material in the VOI;

    c.   acquiring ~~of~~ Debye-Scherrer XRD patterns of the material in the VOI;

    d.   extracting ~~of~~ said Debye-Scherrer XRD patterns;

    e.   converting ~~the~~ said XRD patterns (e.g. rings) of said VOI to standard powder X-ray diffraction ~~spectrum~~ spectra;

    f.   searching and/or matching records in a database for material identification; and ~~then~~,

    g.   alerting the operator in case said material ~~is in matching~~ matches a predetermined record[[.]];

wherein said method enables identification of suspicious substances within said VOI with substantially high efficiency.

16.   (currently amended) A method for acquiring a plurality of XRD images of a VOI ~~by the remote XRD means as defined in claim 1~~, comprising the steps of [[;]] :

    a.   obtaining remote XRD means as defined in claim 1 or any of its dependent claims;

    b.   receiving VOI coordinates from lower stage system;

    c.   irradiating ~~a~~ material within a VOI;

    d.   acquiring ~~of~~ XRD patterns;

    e.   extracting ~~of~~ XRD patterns;

    f.   converting ~~the~~ said XRD patterns (e.g. rings) of said material to standard powder X-ray diffraction ~~spectrum~~ spectra;

    g.   searching and/or matching records in a database for material identification; and ~~then~~,

    h.   alerting the operator in case said material ~~is in matching~~ matches a predetermined record[[.]];

wherein said XRD patterns are acquired by ~~the~~ said remote XRD means as defined in claim 1 or any of its ~~depended~~ dependent claims.

17.   (currently amended) The method according to claim 15[[;]], wherein back-diffraction is provided.

18. (currently amended) The method according to claim 15[[;]], wherein the detector is a Cell-X[[,]] adapted for acquiring both the ~~VOI's~~ XRD image of said VOI and information about ~~its~~ the energy profile of said VOI.

19. (previously amended) The method according to claim 16 wherein back-diffraction is provided.

20. (currently amended) The method according to claim 16[[;]], wherein the step of acquiring XRD patterns is performed by a Cell-X detector adapted for acquiring both the XRD image of said VOI ~~detector is a Cell-X, adapted for acquiring both VOI's XRD image~~ and information about ~~its~~ the energy profile of said VOI.